

# Tutorial - Using the Map Editor

This tutorial is not intended to be a comprehensive description of the full range of possibilities provided by the Natural map editor. Rather, these sessions represent a general introduction to how the map editor may be used. Therefore, explanations are kept to a minimum. For a full description of all functions and features, see the section Map Editor.

It is important that you work through the sessions in the sequence below.

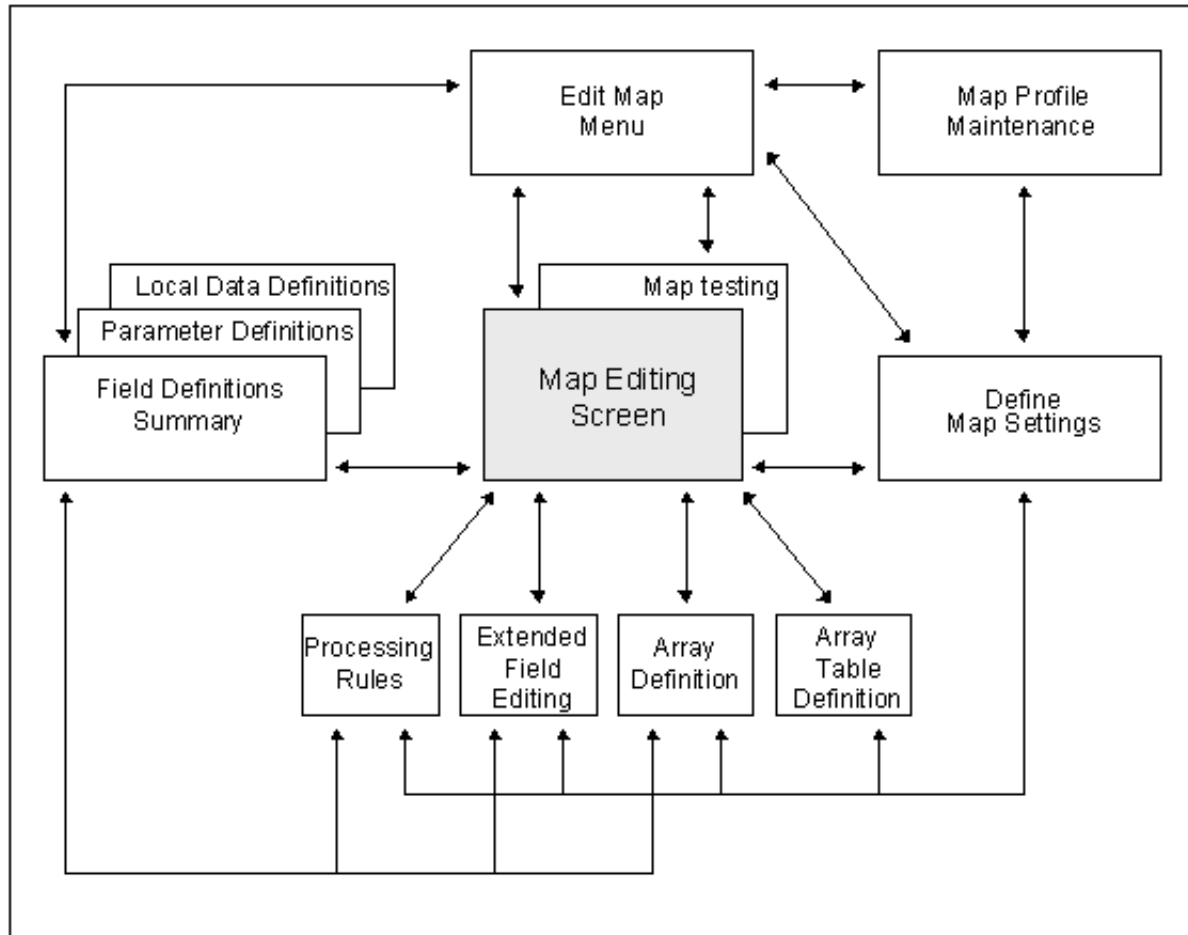
The Natural map editor is used to create *maps* (screen layouts) referenced in a program. The map editor allows *direct manipulation of fields* for screen layouts; *extended field editing* facilitates the definition of fields; *processing rules* within the map can be associated with these fields. Once a map has been created, it may be stored in the Natural system file from where it may be invoked by a Natural program using a WRITE USING MAP or INPUT USING MAP statement.

This section covers the following topics:

- Components of the Map Editor
  - Invoking the Map Editor
  - Session 1 - Designing a Map, Line and Field Commands
  - Session 2 - Processing Rules
  - Session 3 - Extended Field Editing
  - Session 4 - INPUT USING MAP
  - Session 5 - WRITE USING MAP, Fields from a View
-

## Components of the Map Editor

The following diagram gives an overview of the various sections of the map editor.



## Invoking the Map Editor

On the Natural Main Menu, select "Development Functions". The Development Functions menu will be displayed.

For the sessions in this tutorial, change the mode to "Structured" if you are not working in structured mode already. (If you are currently working in reporting mode, enter an "S" in the first position of the Mode field.)

Then enter an "E" (Edit) in the Code field and an "M" (Map) in the Type field. The Edit Map menu will be displayed:

```

13:40:54          ***** NATURAL MAP EDITOR *****          2001-01-31
User SAG              - Edit Map -                      Library SYSTEM

      Code      Function
      ----      -
      D      Field and Variable Definitions
      E      Edit Map
      I      Initialize new Map
      H      Initialize a new Help Map
      M      Maintenance of Profiles & Devices
      S      Save Map
      T      Test Map
      W      Stow Map
      ?      Help
      .      Exit

      Code .. I      Name .. _____      Profile .. SYSPROF_

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help      Exit Test Edit

```

The Edit Map menu is the main menu of the Natural map editor.

### Note:

The map editor contains an extensive help system. Anytime you require help, enter a question mark (?) in the field for which you wish further information. This will invoke the online help for that field. If a field does not have an individual help assigned, a help menu will be displayed, from which you may select the desired item of information.

## Session 1 - Designing a Map, Line and Field Commands

On the Edit Map menu, enter an "I" (Initialize new Map) in the Code field and MAP001 in the Name field. The Define Map Settings For Map screen will be invoked:

13:43:07				Define Map Settings for MAP		2001-01-31	
Delimiters				Format		Context	
-----				-----		-----	
Cls	Att	CD	Del	Page Size	..... 23	Device Check	....
T	D		BLANK	Line Size	..... 79	WRITE Statement	..
T	I		?	Column Shift	... 0 (0/1)	INPUT Statement	X
A	D		_	Layout	.....	Help	.....
A	I		)	dynamic	..... N (Y/N)	as field default	N (Y/N)
A	N		^	Zero Print	..... N (Y/N)		
M	D		&	Case Default	... UC (UC/LC)		
M	I		:	Manual Skip	.... N (Y/N)	Automatic Rule Rank	1
O	D		+	Decimal Char	... .	Profile Name	.... SYSPROF
O	I		(	Standard Keys	.. N (Y/N)		
				Justification	.. L (L/R)	Filler Characters	
				Print Mode	.....	-----	
				Control Var	....	Optional, Partial	....
						Required, Partial	....
						Optional, Complete	...
						Required, Complete	...
Apply changes only to new fields?				N (Y/N)			
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---							
Help				Quit		Let	

Move the cursor to the "Filler Characters" section of the screen. Type in an underscore ( \_ ) after each of the four options as shown below:

Justification .. L (L/R)	Filler Characters
Print Mode ..... _	-----
Control Var .... _	Optional, Partial .... _
	Required, Partial .... _
Apply changes only to new fields? N (Y/N)	Optional, Complete ... _
	Required, Complete ... _
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---	
Help Quit	Let

This will cause any empty positions within an input field on the map to be filled with the underscore ( \_ ). This enables the user to see the exact position and length of a field, which makes entering input easier.

Ignore the other map settings for the time being and press ENTER. Press ENTER again. The map editing screen will be invoked:

Ob _	Ob D CLS ATT DEL	CLS ATT DEL
.	. T D Blnk	T I ?
.	. A D _	A I )
.	. A N ^	M D &
.	. M I :	O D +
.	. O I (	
.	.	
001 --010---+---+---+---030---+---+---+---050---+---+---+---070---+---		
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---		
Help Mset Exit Test Edit -- - + Full << > Let		

The map editing screen will appear in split-screen format, the top half displaying the delimiter characters which are valid for the map to be created, while the bottom half is the area where you actually design a map.

In the first line of the editing area, enter the line command `..F*`, and in the second line type in the text `PERSONNEL INFORMATION` as shown below:

```

Ob _                               Ob D CLS ATT DEL      CLS ATT DEL
.                               .   T  D   Blnk    T  I   ?
.                               .   A  D   _       A  I   )
.                               .   A  N   ^       M  D   &
.                               .   M  I   :       O  D   +
.                               .   O  I   (
.
001  --010---+-----+---030---+-----+---050---+-----+---070---+---
..F*
PERSONNEL INFORMATION

```

The result will be as follows:

```

Ob _                               Ob D CLS ATT DEL      CLS ATT DEL
.                               .   T  D   Blnk    T  I   ?
.                               .   A  D   _       A  I   )
.                               .   A  N   ^       M  D   &
.                               .   M  I   :       O  D   +
.                               .   O  I   (
.
001  --010---+-----+---030---+-----+---050---+-----+---070---+---
*****
PERSONNEL INFORMATION

```

Press PF9 to obtain the full-screen map editing area.

In the bottom line, enter the line command `..F*`. The screen now appears as follows:

```

*****
PERSONNEL INFORMATION

*****
001  --010---+-----+---030---+-----+---050---+-----+---070---+---

```

Type in the line command ".C" in the first three positions of the text:

```
*****
. .CSONNEL INFORMATION
```

As a result, the text will be centered.

Enter the following as shown on the screen below:

```
*****
( *DATX                      PERSONNEL INFORMATION
( *TIMX

PLEASE ENTER CITY: :X(20)
PLEASE ENTER NAME: :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

\*DATX and \*TIMX are Natural system variables which will display the current date and time respectively. The opening parenthesis "(" is the delimiter for intensified output fields. The colon (:) is the delimiter for intensified modifiable fields. The number of Xs indicate the length of the fields.

The map will appear as follows:

```
*****
( XXXXXXXX                      PERSONNEL INFORMATION
( XXXXXXXX

PLEASE ENTER CITY: :XXXXXXXXXXXXXXXXXXXX
PLEASE ENTER NAME: :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

Type in the field command ".M" and move the cursor to the position indicated by [] as shown below:

```
*****
( XXXXXXXX                      PERSONNEL INFORMATION
( XXXXXXXX

. MEASE ENTER CITY: :XXXXXXXXXXXXXXXXXXXX
PLEASE ENTER NAME: :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
[ ]
```

When you press ENTER, the text field where the command was entered will be moved to the cursor position:

```
*****
( XXXXXXXX                      PERSONNEL INFORMATION
( XXXXXXXX

      ENTER CITY: :XXXXXXXXXXXXXXXXXXXX
PLEASE ENTER NAME: :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE
```

Enter the line command "..M" as shown below and move the cursor to the position indicated:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

..M    ENTER CITY::XXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
[ ]LEASE
```

As a result, the line where the command was entered will be moved to the line after the one in which the cursor was positioned:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE
    ENTER CITY::XXXXXXXXXXXXXXXXXXXXX
```

Enter the line command "..J" as shown below:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
..JASE
    ENTER CITY::XXXXXXXXXXXXXXXXXXXXX
```

As a result, the line where the command was entered and the line below it will be joined:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXXX
```



Type in some additional text in the same order and position as below:

```
*****
(XXXXXXXXX                PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXX

THIS PORTION OF TEXT IS
FOR FURTHER DEMONSTRATION
OF THE MOVE
COMMANDS
```

Press ENTER.

Now type in the field command ".M" twice as shown below to move a block of fields:

```
*****
(XXXXXXXXX                PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXX

.MIS PORTION OF TEXT IS
FOR FURTHER DEMONSTRATION
OF THE MOVE
.MMMANDS
```

[ ]

Move the cursor to the position indicated above. As a result, the following block of fields will be moved to the following position, the top left corner of the block being placed at the cursor position:

```

*****
(XXXXXXXXX                PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXXX

        OF TEXT IS
        DEMONSTRATION

                                THIS PORTION
                                FOR FURTHER
                                OF THE MOVE
                                COMMANDS

```

The position and size of the fields where the commands are entered determine the size of the block of fields that is moved, as shown above.

Enter the field command ".M" twice as shown below and move the cursor to the position indicated:

```

*****
(XXXXXXXXX                PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXXX

        .M TEXT IS
        .MMONSTRATION

                                THIS PORTION[ ]
                                FOR FURTHER
                                OF THE MOVE
                                COMMANDS

```

The field and block sizes are marked again. Note that the cursor marks the target position of the top left corner of the whole block, **not** that of the top left field within the block. The result will be the following:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXXX

                                     THIS PORTION OF TEXT IS
                                     FOR FURTHER DEMONSTRATION
                                     OF THE MOVE
                                     COMMANDS
```

Enter the command ".M" three times to determine the entire block of fields as shown below:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXXX

                                     [ ]

                                     .MIS PORTION OF TEXT IS
                                     FOR FURTHER .MMONSTRATION
                                     OF THE MOVE
                                     .MMMANDS
```

Move the cursor to the position indicated above.

The block of fields will be moved to the position shown below:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXXX

                THIS PORTION OF TEXT IS
                FOR FURTHER DEMONSTRATION
                OF THE MOVE
                COMMANDS
```

Enter the line command "..M" twice as shown below:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXXX

..M                THIS PORTION OF TEXT IS
                   FOR FURTHER DEMONSTRATION
                   OF THE MOVE
..M                COMMANDS

[ ]
```

Move the cursor to the position indicated above.

The block of lines marked above will be placed below the line in which the cursor is positioned:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXXX

                THIS PORTION OF TEXT IS
                FOR FURTHER DEMONSTRATION
                OF THE MOVE
                COMMANDS
```

Enter the command ".T" as shown below:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXX

                                THIS PORTION .T TEXT IS
                                FOR FURTHER DEMONSTRATION
                                OF THE MOVE
                                COMMANDS
```

As a result, the rest of the line, starting from the field in which the command was entered, will be deleted:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXX

                                THIS PORTION
                                FOR FURTHER DEMONSTRATION
                                OF THE MOVE
                                COMMANDS
```

Enter the field command ".D" as shown below:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXX

                                THIS PORTION
                                FOR .DRTHER DEMONSTRATION
                                OF THE MOVE
                                COMMANDS
```

The field marked with the command will be deleted:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXX

THIS PORTION
FOR          DEMONSTRATION
OF THE MOVE
COMMANDS
```

Enter the field command ".M" as shown below; then move the cursor to the position indicated:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXX

THIS PORTION
FOR [ ]          .MMONSTRATION
OF THE MOVE
COMMANDS
```

The field marked with the command will be moved to the cursor position:

```
*****
(XXXXXXXXX          PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXX

THIS PORTION
FOR DEMONSTRATION
OF THE MOVE
COMMANDS
```

Enter the line command ".D" twice as shown below to delete a block of lines:

```

*****
(XXXXXXXXX                PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXX

..D                        THIS PORTION
                           FOR DEMONSTRATION
                           OF THE MOVE
..D                        COMMANDS

*****
001  --010---+-----+-----+---030---+-----+-----+---050---+-----+-----070---+-----

```

The block of lines delimited by the commands will be deleted:

```

*****
(XXXXXXXXX                PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXX

*****

001  --010---+-----+-----+---030---+-----+-----+---050---+-----+-----070---+-----

```

Enter the line command "..I4" as shown below:

```

*****
(XXXXXXXXX                PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME::XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXXX
..I4

*****

001  --010---+-----+-----+---030---+-----+-----+---050---+-----+-----+---070---+-----

```

Four empty lines will be inserted, and the bottom line with the asterisks will be moved four lines down.



Press PF4 to test the map:

```
*****
97-01-31                                PERSONNEL INFORMATION
14:14:21

PLEASE ENTER NAME: _____
PLEASE ENTER CITY: _____

*****
```

Press PF3 to end testing of the map. The map editing screen will appear again.

Press PF3 again to end map editing. The Field and Variable Definitions Summary screen will appear. This will be discussed in a later session.

Press ENTER. The Edit Map menu will appear with Name set to MAP001. Enter "S" in the Code field. The map is now saved in source form.

End of Session 1.

## Session 2 - Processing Rules

On the Edit Map menu, enter the code "E" and name MAP001 (if it is not already entered).

The map editing screen will appear in split-screen mode with map MAP001 being read into the editing area.

Enter the command ".P" as shown below:

Ob	D	CLS	ATT	DEL	CLS	ATT	DEL
.		T	D	Blk	T	I	?
.		A	D	_	A	I	)
.		A	N	^	M	D	&
.		M	I	:	O	D	+
.		O	I	(			
.							

```

001  --010---+-----+-----+---030---+-----+-----+---050---+-----+-----+---070---+-----
*****
(XXXXXXXXX                PERSONNEL INFORMATION
(XXXXXXXXX

PLEASE ENTER NAME: .PXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
PLEASE ENTER CITY: :XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
  
```

```

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Mset  Exit  Test  Edit  --    -    +    Full  <    >    Let
  
```

This will invoke the *processing rule* editor for the field in which the command was entered:

```

Variables used in current map                                     Mod
#002(A40)
#001(A20)

Rule                                                             Field #002
>                                                                > + Rank 0      S 0    L 1      Struct Mode
ALL  ....+....10...+....+....+....30...+....+....+....50...+....+....+....70..
0010
0020
0030
0040
0050
0060
0070
0080
0090
0100
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      HELP  Mset  Exit  Test      --    -    +      Full  Sc=      Let

```

Type in the following processing rule:

```

Rule                                                             Field #002
>                                                                > + Rank 0      S 0    L 1      Struct Mode
ALL  ....+....10...+....+....+....30...+....+....+....50...+....+....+....70..
0010 *
0020 IF & = ' ' REINPUT 'PLEASE TYPE IN A NAME'
0030          MARK *&
0040 END-IF
0050 *
0060
0070
0080
0090
0100
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      HELP  Mset  Exit  Test      --    -    +      Full  Sc=      Let

```

The ampersand (&) in the processing rule will be dynamically substituted by the name of the field to which the processing rule is attached.

Press ENTER. Then press PF3 to return to the map editing screen.

Then press PF4 to test the map.

Now you may also test the processing rule: press ENTER. As a result, the processing rule will be executed:

```
*****
01-01-31                      PERSONNEL INFORMATION
14:21:56

PLEASE ENTER NAME: _____
PLEASE ENTER CITY: _____

*****
PLEASE TYPE IN A NAME
```

**Note:**

The text PLEASE TYPE IN A NAME may not necessarily appear at the bottom of the screen (as shown above) but on another line, depending on the position of the message line as set by the Natural administrator.

Press CLEAR to end testing of the map. The map editing screen will appear again.

Enter the command ".P" in the same position as before. The processing rule for rank 0 of the field where the command was entered will be displayed again.

Enter the command "P=5" as shown below:

```

Rule                                     Field #002
> P=5                                  > + Rank 0      S 5    L 1      Struct Mode
ALL  ....+....10...+....+....+....30...+....+....+....50...+....+....+....70..
0010 *
0020 IF & = ' ' REINPUT 'PLEASE TYPE IN A NAME'
0030          MARK *&
0040 END-IF
0050 *
0060
0070
0080
0090
0100
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      HELP  Mset  Exit  Test      --    -    +      Full  Sc=      Let

```

As a result, the processing rule which previously was assigned rank 0 will now be assigned rank 5 (processing rules are processed in ascending order of rank, starting with rank 0).

Enter the command P0 as shown below:

```

Rule                                     Field #002
> P0                                   > + Rank 5      S 5    L 1      Struct Mode
ALL  ....+....10...+....+....+....30...+....+....+....50...+....+....+....70..
0010 *
0020 IF & = ' ' REINPUT 'PLEASE TYPE IN A NAME'
0030          MARK *&
0040 END-IF
0050 *
0060
0070
0080
0090
0100
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      HELP  Mset  Exit  Test      --    -    +      Split Sc=      Let

```

An empty editor screen will be displayed, because there is no longer any processing rule assigned to rank 0.

```

Rule                                     Field #002
>                                     > + Rank 0      S 0   L 1   Struct Mode
ALL  ....+....10...+....+....+....30...+....+....+....50...+....+....+....70..
0010
0020
0030
0040
0050
0060
0070
0080
0090
0100
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      HELP  Mset  Exit  Test      --    -    +    Full  Sc=      Let

```

Type in the following processing rule:

```

Rule                                     Field #002
>                                     > + Rank 0      S 0   L 1   Struct Mode
ALL  ....+....10...+....+....+....30...+....+....+....50...+....+....+....70..
0010 *
0020 IF & = MASK ( '.' ) STOP
0030 END-IF
0040 *
0050
0060
0070
0080
0090
0100
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
      HELP  Mset  Exit  Test      --    -    +    Full  Sc=      Let

```

Press ENTER. Then press PF3 to return to the map editing screen.

Press PF3 again. The Field and Variable Definitions Summary screen will be invoked:

14:27:32	Field and Variable Definitions - Summary					2001-01-31
Cmd	Field Name (Truncated)	Mod	Format	Ru	Lin	Col
___ *DATX		S	D		2	2
___ *TIMX		S	T		3	2
___ #002			A40	1	5	20
___ #001			A20		6	20

The fields contained in the map are listed in the order in which they appear on the map. The two user-defined fields are preceded by a hash/number (#). In order to be able to store the map, you must name these fields. Type in the following names as shown below:

14:28:21	Field and Variable Definitions - Summary					2001-01-31
Cmd	Field Name (Truncated)	Mod	Format	Ru	Lin	Col
___ *DATX		S	D		2	2
___ *TIMX		S	T		3	2
___ #NAME			A40	1	5	20
___ #CITY			A20		6	20

Press ENTER twice. The Edit Map menu will appear. Enter the code "W" to store the map. The map MAP001 is now stored in source and object form.

End of Session 2.

## Session 3 - Extended Field Editing

On the Edit Map menu, enter the code "E" and name MAP001 (if it is not already entered). The map editing screen will appear with map MAP001 being read into the editing area.

On the map, enter some additional text as shown below:

Ob	D	CLS	ATT	DEL	CLS	ATT	DEL
.		T	D	Blk	T	I	?
.		A	D	_	A	I	)
.		A	N	^	M	D	&
.		M	I	:	O	D	+
.		O	I	(			
.							

001 --010---+---+---+---030---+---+---+---050---+---+---+---070---+---+---+---

\*\*\*\*\*

(XXXXXXXX PERSONNEL INFORMATION

(XXXXXXXX

PLEASE ENTER NAME::XX

PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXX

TYPE IN?. TO STOP OR?? FOR HELP.

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---

Help Mset Exit Test Edit -- - + Full << > Let

The question mark (?) is the delimiter for intensified text fields.



Then enter the command ".E" as shown below:

Ob	D	CLS	ATT	DEL	CLS	ATT	DEL
.		T	D	Blk	T	I	?
.		A	D	_	A	I	)
.		A	N	^	M	D	&
.		M	I	:	O	D	+
.		O	I	(			
.							

001 --010---+-----+-----030---+-----+-----050---+-----+-----070---+-----  
 \*\*\*\*\*  
 (XXXXXXXX PERSONNEL INFORMATION  
 (XXXXXXXX  
  
 PLEASE ENTER NAME:.eXXX  
 PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXXX  
  
 TYPE IN?. TO STOP OR?? FOR HELP.  
  
  
  
 Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---  
 Help Mset Exit Test Edit -- - + Full << > Let

The *extended field editing* facility for the field in which the command was entered will appear:

Fld	#NAME	Fmt	A40
AD=	MIT'_'_____	ZP=	OFF
AL=	_____	SG=	OFF
PM=	___ DF=	HE=	_____
EM=	_____	CD=	___
		CV=	_____
		DY=	_____

001 --010---+-----+-----030---+-----+-----050---+-----+-----070---+-----  
 \*\*\*\*\*  
 (XXXXXXXX PERSONNEL INFORMATION  
 (XXXXXXXX  
  
 PLEASE ENTER NAME:.EXXX  
 PLEASE ENTER CITY::XXXXXXXXXXXXXXXXXXXXX  
  
 TYPE IN?. TO STOP OR?? FOR HELP.

In the field "Fmt" enter A20, and in the field "HE=" enter 'HELP001' (in apostrophes!) as shown below:

Fld #NAME					Fmt A20
AD= MIT'_'	ZP= OFF	SG= OFF	HE= 'HELP001'	Rls 1	
AL=	CD=	CV=		Mod User	
PM=	DF=	DY=			
EM=					
001 --010---+---+---+---+---030---+---+---+---+---050---+---+---+---+---070---+---+					
*****					
(XXXXXXXX PERSONNEL INFORMATION					
(XXXXXXXX					
PLEASE ENTER NAME:.XXXXXXXXXXXXXXXXXXXXX					
PLEASE ENTER CITY:.XXXXXXXXXXXXXXXXXXXXX					
TYPE IN?. TO STOP OR?? FOR HELP.					

The field length is now reduced to 20. HELP001 (which is yet to be created) is now assigned as help routine/help map to the field.

Press PF3 to return to the map editing screen. Then press PF3 again to return to the Edit Map menu. Enter the code "W" to store map MAP001.

On the Edit Map menu, enter the code "H" and name HELPMAP. The Define Map Settings for HELPMAP screen will be invoked.

The Page Size is set to 23, the Line Size to 79. Change the Page Size to 15 and the Line Size to 25 by typing over the existing values.

The map settings should now look as below:

14:34:20				Define Map Settings for HELPMAP		2001-01-31	
Delimiters				Format		Context	
-----				-----		-----	
Cls	Att	CD	Del	Page Size	..... 15	Device Check	.... _____
T	D		BLANK	Line Size	..... 25	WRITE Statement	
T	I		?	Column Shift	... 0 (0/1)	INPUT Statement	X
A	D		_	Layout	..... _____		00000
A	I		)	dynamic	..... N (Y/N)		N
A	N		^	Zero Print	..... N (Y/N)	Position Line	Col
M	D		&	Case Default	... UC (UC/LC)		
M	I		:	Manual Skip	.... N (Y/N)	Automatic Rule Rank	1
O	D		+	Decimal Char	... .	Profile Name	.... SYSPROF
O	I		(	Standard Keys	.. N (Y/N)	Filler Characters	
				Justification	.. L (L/R)	-----	
				Print Mode	..... _	Optional, Partial	....
				Control Var	.... _____	Required, Partial	....
Apply changes only to new fields?				N (Y/N)		Optional, Complete	...
						Required, Complete	...
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---							
Help				Quit		Let	

When you press ENTER twice, the map editing screen will appear. Press PF9 to switch to full-screen mode:

[illegible]

The portion of the screen not to be used is filled with lines of periods.

Enter some text as follows:

```

Type in the name of an
employee in the first
field and press ENTER.
You will then receive
a list of all employees
of that name.

For a list of employees
of a certain name who
live in a certain city,
type in a name in the
first field and a city
in the second field
and press ENTER.

```

Then press PF3 to return to the Edit Map menu. Enter the code "W" to stow help map HELP001.

Enter the code "T" and name MAP001 to test MAP001.

Enter a question mark (?) in the first position of the field entitled PLEASE ENTER NAME. Help map HELP001 will be displayed:

```

*****
01-01-31                      PERSONNEL INFORMATION
15:12:06

PLEASE ENTER NAME: ? _____
PLEASE ENTER CITY:  _____
                                +-----+
TYPE IN . TO STOP  !               !
                   ! Type in the name of an      !
                   ! employee in the first        !
                   ! field and press ENTER.       !
                   ! You will then receive        !
                   ! a list of all employees      !
                   ! of that name.                !
                   !                             !
                   ! For a list of employees      !
                   ! of a certain name who        !
                   ! live in a certain city,      !
                   ! type in a name in the        !
                   ! first field and a city       !
                   ! in the second field         !
                   ! and press ENTER.             !
***** ! *****
                                +-----+

```

Press ENTER.

Press ENTER again to test the processing rule for the first field.

Press CLEAR to end testing. The Edit Map menu will appear again.

End of Session 3.

## Session 4 - INPUT USING MAP

- If you have access to a copy of the program PROG001, enter EDIT PROG001 in the Command line of the Edit Map menu. (By default, sample programs are provided in the system library SYSEXP; ask your natural administrator for details.)  
PROG001 will be read into the program editor. Make sure that the program is identical to the one shown below.
- If you do not have access to a copy of PROG001, enter EDIT PROGRAM in the Command line of the Edit Map menu.  
The program editor will be invoked. If necessary, CLEAR the program editor (with the command CLEAR).  
Then type in the following program:

### PROG001:

```

** PROG001
*****
DEFINE DATA LOCAL
01 #NAME (A20)
01 #CITY (A20)
01 PERS-VIEW VIEW OF EMPLOYEES
    02 NAME
    02 FIRST-NAME
    02 CITY
END-DEFINE
*
REPEAT
*
INPUT USING MAP 'MAP001'
*
IF #CITY NE ' ' AND #NAME NE ' '
    FIND PERS-VIEW WITH NAME = #NAME AND CITY = #CITY
    IF NO RECORDS FOUND
        REINPUT 'NO ONE BY THIS NAME LIVING IN THIS CITY.'
        MARK *#CITY
    END-NOREC
    DISPLAY NOTITLE NAME FIRST-NAME CITY
    END-FIND
ELSE
    IF #NAME NE ' '
        FIND PERS-VIEW WITH NAME = #NAME
        IF NO RECORDS FOUND
            REINPUT 'PLEASE TRY ANOTHER NAME.'
        END-NOREC
        DISPLAY NOTITLE NAME FIRST-NAME CITY
        END-FIND
    END-IF
END-IF
*
END-REPEAT
END

```

CHECK the program and correct any errors. STOW the program under the name of PROG001 (If no program name is displayed in the top line of the editor, enter STOW PROG001. If the program name PROG001 is displayed, simply enter the command STOW).

Then enter the command RUN to execute the program. Map MAP001 will be displayed.

► **To see if everything works as intended**

1. Press ENTER without typing in anything. As a result, the message PLEASE TYPE IN A NAME will be displayed.
2. Enter a question mark (?) in the first input field of the map. As a result, the help map "Type in the name of ... etc." will appear as a window on the map. - Press ENTER.
3. Enter the name MCKENNA in the first input field of the map. As a result, the message PLEASE TRY ANOTHER NAME will be displayed.
4. Enter the name JONES in the first input field of the map. As a result, the program will display the following list:

NAME	FIRST-NAME	CITY
-----	-----	-----
JONES	VIRGINIA	TULSA
JONES	MARSHA	MOBILE
JONES	ROBERT	MILWAUKEE
JONES	LILLY	BEVERLEY HILLS
JONES	EDWARD	CAMDEN
JONES	MARTHA	KALAMAZOO
JONES	LAUREL	BALTIMORE
JONES	KEVIN	DERBY
JONES	GREGORY	NOTTINGHAM

Keep pressing ENTER until you return to the map.

5. Enter the name JONES in the first input field and the name of the city DUNFERMLINE in the second input field. As a result, the message NO ONE BY THIS NAME LIVING IN THIS CITY will be displayed.
6. Enter the name JONES in the first input field and the name of the town TULSA in the second input field. As a result, the program will display the following list:

NAME	FIRST-NAME	CITY
-----	-----	-----
JONES	VIRGINIA	TULSA

Press ENTER to return to the map.

7. Enter a period (.) in the first input field. The program will be terminated, and you will be returned to the program editor.

End of Session 4.

## Session 5 - WRITE USING MAP, Fields from a View

Enter the command SAVE PROG002 to save a copy of program PROG001 under the new name of PROG002.

Then enter the command READ PROG002 to read the newly created program PROG002 into the work area.

Modify the program to match with the one on the next page.

### PROG002:

```

** PROG002
*****
DEFINE DATA LOCAL
01 #NAME (A20)
01 #CITY (A20)
01 PERS-VIEW VIEW OF EMPLOYEES
    02 NAME
    02 FIRST-NAME
    02 CITY
END-DEFINE
*
REPEAT
*
INPUT USING MAP 'MAP001'
*
IF #CITY NE ' ' AND #NAME NE ' '
    FIND PERS-VIEW WITH NAME = #NAME AND CITY = #CITY
    IF NO RECORDS FOUND
        REINPUT 'NO-ONE BY THIS NAME LIVING IN THIS CITY.'
        MARK *#CITY
    END-NOREC
*
    AT START OF DATA
        WRITE 'THE FOLLOWING EMPLOYEES LIVE IN' CITY
    END-START
    WRITE USING MAP 'MAP003'
*
    END-FIND
ELSE
    IF #NAME NE ' '
        FIND PERS-VIEW WITH NAME = #NAME
        IF NO RECORDS FOUND
            REINPUT 'PLEASE TRY ANOTHER NAME.'
            END-NOREC
*
            WRITE USING MAP 'MAP002'
*
            END-FIND
        END-IF
    END-IF
*
END-REPEAT
END

```



When you have made all changes, enter the command SAVE in the command line of the program editor to save PROG002.

In the command line of the program editor, enter the command EDIT MAP.

The Edit Map menu will be displayed. Enter the code "I" and name MAP002.

The Define Map Settings For Map screen will be displayed. Change the Page Size to 60. Then type in an "X" after "WRITE Statement" and type a blank over the "X" after "INPUT Statement".

When you press ENTER, the map editing screen will be displayed. In the top line of the screen, enter "V EMPLOYEES". The fields definitions of the view (DDM) EMPLOYEES will be listed:

Ob	V	EMPLOYEES	Ob	D	CLS	ATT	DEL	CLS	ATT	DEL
1	PERSONNEL-ID	A8	.	T	D	Blk	T	I	?	
.	FULL-NAME	*G1	.							
2	FIRST-NAME	A20	.							
3	MIDDLE-I	A1	.				O	D	+	
4	NAME	A20	.	O	I	(				
5	MIDDLE-NAME	A20	.							
001	--010---+-----+-----030---+-----+-----050---+-----+-----070---+-----									
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12--- Help Mset Exit Test Edit -- - + Full << > Let										

In the editing area, enter the following:

Ob	V	EMPLOYEES	Ob	D	CLS	ATT	DEL	CLS	ATT	DEL
1	PERSONNEL-ID	A8	.	T	D	Blk	T	I	?	
.	FULL-NAME	*G1	.							
2	FIRST-NAME	A20	.							
3	MIDDLE-I	A1	.				O	D	+	
4	NAME	A20	.	O	I	(				
5	MIDDLE-NAME	A20	.							
001	--010---+-----+-----030---+-----+-----050---+-----+-----070---+-----									
NAME: ( 4										
( 2										

Two fields are now defined on the map using the field definitions of the fields NAME and FIRST-NAME taken from the view. When you press ENTER, the screen will look as below:

```

Ob V EMPLOYEES
1 PERSONNEL-ID          A8      .      T  D      Blnk      T  I      ?
. FULL-NAME             *G1      .
2 FIRST-NAME            A20      .
3 MIDDLE-I              A1       .
4 NAME                  A20      .      O  I      (
5 MIDDLE-NAME           A20      .
001  --010---+-----+-----030---+-----+-----050---+-----+-----070---+-----
NAME: (XXXXXXXXXXXXXXXXXXXXX
      (XXXXXXXXXXXXXXXXXXXXX

```

On the top line of the screen, type in a plus (+) sign over the "V". Repeat this step until the field "2 CITY" appears in the list. Use the minus (-) sign if you want to scroll backward.

Use the command ".M" to move the field from the second line of the editing area to the position shown below. Then enter "CITY:(2" as shown below:

```

Ob V EMPLOYEES
. FULL-ADDRESS          *G1      .      T  D      Blnk      T  I      ?
1 ADDRESS-LINE          A20      .      A  D      _      A  I      )
2 CITY                  A20      .      A  N      ^      M  D      &
3 ZIP                   A10      .      M  I      :      O  D      +
4 POST-CODE             A10      .      O  I      (
5 COUNTRY               A3       .
001  --010---+-----+-----030---+-----+-----050---+-----+-----070---+-----
NAME: (XXXXXXXXXXXXXXXXXXXXX (XXXXXXXXXXXXXXXXXXXXX CITY: (2

```

The map should look as follows:

```

Ob V EMPLOYEES
. FULL-ADDRESS          *G1      .      T  D      Blnk      T  I      ?
1 ADDRESS-LINE          A20      .      A  D      _      A  I      )
2 CITY                  A20      .      A  N      ^      M  D      &
3 ZIP                   A10      .      M  I      :      O  D      +
4 POST-CODE             A10      .      O  I      (
5 COUNTRY               A3       .
001  --010---+-----+-----030---+-----+-----050---+-----+-----070---+-----
NAME: (XXXXXXXXXXXXXXXXXXXXX (XXXXXXXXXXXXXXXXXXXXX CITY: (XXXXXXXXXXXXXXXXXXXXX

```

Press PF3 to return to the Edit Map menu.

Enter the code "W" to stow map MAP002.

Enter the code "I" and name MAP003. The Define Map Settings For Map screen will be displayed. Change the Page Size to 60; mark "WRITE Statement" with an "X"; unmark "INPUT Statement"; and type in MAP002 after "Layout". The map settings should be as follows:

15:33:53				Define Map Settings for MAP		2001-01-31	
Delimiters				Format		Context	
-----				-----		-----	
Cls	Att	CD	Del	Page Size	..... 60	Device Check	.... _____
T	D		BLANK	Line Size	..... 79	WRITE Statement	X
T	I		?	Column Shift	... 0 (0/1)	INPUT Statement	
A	D		_	Layout	..... MAP002__	Help	_____
A	I		)	dynamic	..... N (Y/N)	as field default	N (Y/N)
A	N		^	Zero Print	..... N (Y/N)		
M	D		&	Case Default	... UC (UC/LC)		
M	I		:	Manual Skip	.... N (Y/N)	Automatic Rule Rank	1
O	D		+	Decimal Char	... .	Profile Name	.... SYSPROF
O	I		(	Standard Keys	.. N (Y/N)		
				Justification	.. L (L/R)	Filler Characters	
				Print Mode	..... _	-----	
				Control Var	.... _____	Optional, Partial	....
						Required, Partial	....
						Optional, Complete	...
						Required, Complete	...
Apply changes only to new fields?				N (Y/N)			
Enter-PF1----				PF2----	PF3----	PF4----	PF5----
Help				Quit			
				PF6----	PF7----	PF8----	PF9----
				PF10----	PF11----	PF12----	
						Let	

When you press ENTER, the map editing screen will be displayed with the layout of map MAP002 in the edit area.

Use the command ".T" to delete CITY:(XXXXXXXXXXXXXXXXXXXXX.

Use the command ".M" to move the second of the remaining output fields to the right.

Insert the text "FIRST NAME:" into the line.

The map should now look as shown below:

```

Ob _                               Ob D CLS ATT DEL      CLS ATT DEL
.                                  .      T  D      Blnk      T  I      ?
.                                  .
.                                  .
.                                  .
.                                  .      O  D      +
.                                  .      O  I      (
.                                  .

001  --010---+---+---+---030---+---+---050---+---+---070---+---
NAME:(XXXXXXXXXXXXXXXXXXXXX FIRST NAME: (XXXXXXXXXXXXXXXXXXXXX

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10--PF11--PF12---
      Help  Mset  Exit  Test  Edit  --      -      +      Full  <<      >      Let

```

Press PF3 to return to the Edit Map menu.

Enter the code "W" to stow map MAP003.

In the Command line, enter EDIT PROG002.

The program editor will appear with program PROG002 in the work area.

RUN the program. Map MAP001 will be displayed.

Enter the name JONES and no city. The list produced by the program will now use MAP002:

Page	1		2001-01-31 15:38:11
NAME: JONES	VIRGINIA	CITY: TULSA	
NAME: JONES	MARSHA	CITY: MOBILE	
NAME: JONES	ROBERT	CITY: MILWAUKEE	
NAME: JONES	LILLY	CITY: BEVERLEY HILLS	
NAME: JONES	EDWARD	CITY: CAMDEN	
NAME: JONES	MARTHA	CITY: KALAMAZOO	
NAME: JONES	LAUREL	CITY: BALTIMORE	
NAME: JONES	KEVIN	CITY: DERBY	
NAME: JONES	GREGORY	CITY: NOTTINGHAM	

Press ENTER to return to MAP001.

Enter the name JONES and the city DERBY. Map MAP003 will be displayed:

Page	2		2001-01-31 15:39:11
THE FOLLOWING EMPLOYEES LIVE IN DERBY			
NAME: JONES	FIRST NAME: KEVIN		

Press ENTER again to return to MAP001.

Enter a period (.) in the NAME field to return to the program. STOW the program.

End of Session 5.